

**Field Sampling Plan (FSP)
for Limited Phase II Environmental Site
Investigation
at
Montopolis Park
Austin, Texas**

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Prepared for:



**THE CITY OF AUSTIN
BROWNFIELDS PROGRAM**

Prepared by:



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On Behalf of:



**AUSTIN BROWNFIELDS
REVITALIZATION OFFICE**

December 2016

FIELD SAMPLING PLAN
LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT
at Montopolis Park
Austin, Texas

Prepared for:

CITY OF AUSTIN
Community-Wide Assessment Program

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ABBREVIATIONS AND ACRONYMS

ABRO	Austin Brownfields Revitalization Office
BEG	Bureau of Economic Geology
bgs	Below Ground Surface
BTEX	Benzene, toluene, ethylbenzene and xylene
CAS	Chemical Abstracts Service
CCV	Continuing Calibration Verification Blank
City	City of Austin
Contract	City of Austin's Brownfields Revitalization Program contract with INTERA
COPC	Chemical of Potential Concern
CSM	Conceptual Site Model
CWA	Office Community-Wide Assessment
DQO	Data Quality Objective
EHS	Environmental Hazards Services, LLC
ELLAP	Environmental Lead Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FSP	Field Sampling Plan
ft	Feet
GPS	Global Positioning System
GW	Groundwater Sample
Halff	Halff Associates, Inc.
ICV	Initial Calibration Verification Blank
ID	Identification Number
IDW	Investigation-Derived Waste
INTERA	INTERA Incorporated
LCS	Laboratory Control Sample
LORP	Level of Required Performance
MLQ	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NELAP	National Environmental Laboratory Accreditation Program

PPE	Personal Protective Equipment
Project	City of Austin Brownfields Revitalization Program
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RCI	Reactivity, Corrosivity, and Ignitability
REC	Recognized Environmental Condition
Site	Montopolis Park, 1200 Montopolis Drive, Austin, Texas
SOP	Standard Operating Procedure
SSHASP	Site-Specific Health and Safety Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TLAP	Texas Laboratory Accreditation Program
TPH	Total Petroleum Hydrocarbons
TWDB	Texas Water Development Board
TX	Texas
USDA	United States Department of Agriculture
USEPA	U.S. Environmental Protection Agency
VISL	Vapor Intrusion Screening Level

1.0 TASK SUMMARY

INTERA Incorporated (INTERA) is initiating Limited Phase II Environmental Site Assessment (ESA) investigation activities at the Montopolis Park property located at 1200 Montopolis Drive in Austin, Texas (Site). The Limited Phase II ESA is being conducted for the City of Austin's Brownfields Revitalization Program under contract # MA 6100 SA150000006 (Contract). General work completed under this Contract is referred to as the Project and individual assignments are referred to as Tasks. This Project Task is for installation and sampling of one temporary groundwater monitor well on the Site and was requested of INTERA by Christine Whitney of the Austin Brownfields Revitalization Office. A separate site-specific health and safety plan (SSHASP) addressing safety protocols for this Task has been prepared and is provided as **Appendix A**.

This field sampling plan (FSP) and the "Austin Brownfields Revitalization Office (ABRO) Community-Wide Assessment (CWA) Program Generic Quality Assurance Project Plan (Project QAPP)" (INTERA, 2016) describe the planned activities for this Task. This section summarizes Task objectives, schedule, and management while the following sections of this FSP (1) describe the conceptual site model (CSM), (2) list technical and/or regulatory guidelines, (3) provide details of Task-specific Limited Phase II ESA activities, (4) describe the analytical requirements, and (5) list exceptions, additions, and changes to the Project QAPP or standard operating procedures (SOPs).

1.1 Objectives of the Task

The overall objective of a Limited Phase II ESA completed under this Project is to establish the absence or presence and general magnitude of petroleum products in the groundwater at Montopolis Park. Specifically, the Limited Phase II ESA intends to investigate potential impacts associated with the presence of two underground storage tanks at the Montopolis Grocery Store located at 1211 Montopolis Drive, which adjoins the Site to the southeast.

The Data Quality Objective (DQO) process is used to establish performance and acceptance criteria, which serve as the basis for designing a plan to collect data of sufficient quality and quantity to support the goals of the Project. The steps of the DQO process as applied specifically to this Project Task are presented in **Table 1**. These site-specific Limited Phase II ESA DQOs are in addition to the overall Project DQOs as presented in Section A.4.1 of the Project QAPP.

1.2 Task Management and Schedule

INTERA personnel, in coordination with the following subcontracted vendors: Vortex Drilling, Inc., DHL Analytical, Inc., and USA Environment shall implement the proposed sampling and

data collection activities listed herein on behalf of the City's Brownfields Program per the Project management control criteria defined in Section A of the Project QAPP. The assigned Application Team and their associated responsibilities specific to this Limited Phase II ESA are presented in **Figure 1** and in **Table 2**, respectively. The corresponding field implementation and associated deliverable schedule proposed for the Limited Phase II ESA activities is provided in **Table 3**.

2.0 CONCEPTUAL SITE MODEL

The CSM is the basis for this FSP and for site-specific DQOs. The CSM takes into account current site conditions and potential human and environmental exposure through potential or actual contaminant release and probable migration to potential receptors. The key components of the CSM for the Site include: (1) setting, (2) history, (3) source areas (known or potential) including previous sampling and analytical results, (4) known or suspected chemicals of potential concern (COPCs), and (5) migration and exposure pathways. A discussion of these CSM components follows.

2.1 Site Setting

2.1.1 Site Location and Description

The Montopolis Park property is located at 1200 Montopolis Drive in Austin, Texas. The property is located on the southwest corner of the intersection of Montopolis Drive and Larch Terrace in east Austin. A site location map is provided as **Figure 2**.

The Site is roughly rectangular in shape and consists of 7.60 acres of land that is currently owned by the City of Austin (City). Future development at the Site includes replacement of existing Site buildings, specifically the Recreation Center and the Community Center. Existing improvements to the property include a baseball field, a swimming pool, a playground area, and several parking lots. Structures on the property include the Recreation Center, the Community Center, a small building associated with the pool, and a temporary mobile office. A site layout map depicting the Site is provided as **Figure 3**. Figure 3 also depicts the surrounding property uses. The Site is bound to the southeast by Montopolis Drive, to the northeast by Larch Terrace, and to the northwest and southwest by residential properties.

2.1.2 Topography and Drainage

Based on review of a topographic survey provided by the City, the Site has an elevation between approximately 487 and 493 feet above mean sea level (Halff, 2013) with the highest area being in the southeast corner of the property. Surface water runoff over most of the property is to the north, northwest, and northeast where it flows into the City's stormwater control system.

Surface water runoff in a small portion of the Site in the southeast corner will flow to the south, southeast, and southwest where it will also enter the City's stormwater control system. The Site lies within the drainage area of Country Club Creek (approximately 0.46 miles northwest of the Site) which ultimately discharges into the Colorado River (approximately 0.85 mile north-northeast of the Site) (Rand McNally, 1993). The Site is located within the Colorado River Basin.

2.1.3 Geology and Hydrogeology

The Geologic Atlas of Texas, Austin Sheet (BEG, 1981) was reviewed to determine the geologic formation(s) that outcrop across the Site. The Site appears to be located within fluvial terrace deposits that overlie the Ozan Formation. The Ozan Formation, or lower Taylor Marl, consists of marly, calcareous clay that is light gray to brown in color with a thickness of approximately 600 feet. The geologic map also revealed the presence of extensive faulting to the west of the Site that is associated with the Balcones Fault Zone. The nearest fault appears to be located approximately 2 miles west of the Site.

According to the United States Department of Agriculture Natural Resources Conservation Service, the soil units present at the Site are the Houston Black (clay soils with very low to moderately low infiltration rates) and Urban land (clayey soils with very slow infiltration rates) (USDA, 2016). The Heaton loamy fine sand and Chaney fine sandy loam are also listed in the area (USDA, 2016).

The Texas Water Development Board (TWDB) Water Data Interactive viewer was reviewed to determine if the Site is located over any major or minor aquifers. Based on the mapping system, it appears that the Site is located over the down-dip portion of the Trinity Aquifer (major aquifer) (TWDB, 2016). The Site is not located over or within close proximity to any minor aquifers. The TWDB Water Data Interactive viewer was also reviewed to determine depth of the uppermost groundwater bearing zone at the Site. Wells in the vicinity of the Site are completed in alluvium or terrace deposits related to the Colorado River with reported depth-to-water measurements ranging from 9 feet (ft) below ground surface (bgs) to approximately 34 ft bgs. Groundwater flow within the alluvium and terrace deposits is expected to be to the north toward the Colorado River. The TCEQ online Edwards Aquifer mapping system was also reviewed to determine if the subject property is located within the Edwards Aquifer recharge zone. The mapping system indicated that the Site is not located within the recharge zone (TCEQ, 2016).

2.2 Site History and Process

The Site currently exists as a community park and recreation area and consists of several structures and other recreation amenities. Existing structures include the Recreation Center, the Community Center, a small building associated with the pool, and a temporary mobile office.

Additional improvements to the property include a baseball field, a swimming pool, a playground area, and several parking lots. Historically, the property has been owned by the City of Austin and has functioned as a public park since at least 1975 with construction of the Recreation Center. The Community Center was constructed in 1977, and the pool and associated building were constructed in 1978 (City of Austin, 2016).

As shown in **Figure 3**, current land use adjacent to the Site includes mixed residential/commercial properties as follows: the Site is bound to the southwest and northwest by residential properties, to the northeast by Larch Terrace and then residential properties, and to the southeast by Montopolis Drive and then mixed residential and commercial properties including Montopolis Grocery Store and Shell Station, a Franciscan Convent, and Dolores Catholic Church.

2.3 Potential Source Areas and Previous Investigations

The Montopolis Grocery Store, the possible source of petroleum products, is located southeast of the Site closest to the intersection of Montopolis Drive and Porter Street (**Figure 3**). The two underground storage tanks (USTs) at this facility were installed in 1980. The two USTs were identified in the Phase I ESA for the Site as recognized environmental conditions (RECs) due to the long use of petroleum products at the Montopolis Grocery Store.

2.4 Chemicals of Potential Concern

Based on the current Site CSM, Limited Phase II ESA COPCs identified for the Site include:

- Benzene,
- Toluene,
- Ethylbenzene,
- Xylenes, and
- Total Petroleum Hydrocarbons (TPH).

Benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH are identified as Site COPCs based on the age of the USTs at the Montopolis Grocery Store, which increases the possibility that the tanks have leaked and impacted groundwater. These Site COPCs are summarized in **Table 4**.

2.5 Migration and Exposure Pathways

The City of Austin is planning to demolish the Community Center in preparation for construction of a new building on the property. Since the two USTs have been identified as RECs, the possibility for impacts to the groundwater at the site is being investigated to evaluate the groundwater ingestion pathway. Additionally, if the USTs have leaked and groundwater is less than six feet deep, there is the potential for a vapor migration pathway. These two pathways could pose a potential hazard to future site construction workers and/or future occupants of the site.

3.0 LIMITED SITE ASSESSMENT ACTIVITIES

The following field activities will be conducted as part of the Limited Phase II ESA:

- Install one soil boring for temporary monitor well installation. No soil samples will be collected for chemical analysis during well installation. Soil cores will be obtained during drilling for the purpose of preparing a boring log.
- Install one temporary monitor well and collect one groundwater sample from the temporary monitor well. Results will be used to evaluate shallow groundwater and vapor impacts to the site.
- Submit groundwater samples to the fixed laboratory for analysis of BTEX via EPA Method 8260C and Total Petroleum Hydrocarbons by TCEQ Method TX1005.
- Compare groundwater analytical results to applicable Residential ^{GW}GW_{Ing} PCLs for BTEX components and TPH.
- Compare groundwater analytical results to EPA Vapor Intrusion Screening Levels (VISLs).
- Report findings of the Limited Phase II ESA to the City in a final report upon receipt of final analytical data.

Phase II ESA sample collection activities are fully described in the following subsections.

3.1 Sampling Design

Site-specific DQOs have established the need to obtain additional data regarding the potential for contamination of Site groundwater via the collection of a representative sample. Investigation activities will focus on obtaining a groundwater sample from the Site north of the Montopolis Grocery Store. The proposed location for the temporary groundwater monitor well is shown on **Figure 4**. The final temporary groundwater monitor well location will be determined in the field based on Site conditions.

Details regarding the field activities that incorporate these sampling approaches are discussed in the appropriate sections below.

3.2 Field Activities and Sampling Methods

This section presents the details regarding field activities to be performed at the Site as part of the Limited Phase II ESA. As outlined in the CSM, Limited Phase II ESA field activities apply only to Montopolis Park and will include characterization sampling activities. The proposed characterization sampling location is shown on **Figure 4**. Copies of applicable SOPs are provided in **Appendix B**.

As with any investigation, it is important to note that specifications/designs as presented in this FSP are based on current Site knowledge and investigation DQOs. Specifications/designs are subject to change based on conditions encountered in the field. During implementation of investigation activities, if field conditions vary greatly from what is expected, it may be necessary to cease fieldwork and reassess the specifications/designs necessary for successful completion of the investigation.

Any deviations in the field from referenced SOPs, the approved FSP, or the approved Project QAPP not currently listed in **Section 6** of this FSP shall require approval by one or more appropriate members of the Project Oversight Team prior to implementation and recorded with the associated rationale in the field logbook. Significant deviations from the FSP or the Project QAPP will also require approval by USEPA Region 6.

Any incurred deviations shall be reported in the Limited Phase II ESA final report.

3.2.1 Establishment of Work Zones and Waste Management Areas

Establishment of work zones is not applicable for this project. A temporary waste management area will be designated for IDW as discussed in Section 3.6.

3.2.2 Access Agreements, Utilities, Permits

Full access to the Site has been granted by the City of Austin. A copy of this agreement, provided to INTERA by the City of Austin, is included in **Appendix C**. Access was granted for the following purposes related to Brownfields Site Assessments:

1. The taking of samples, surface and subsurface, including but not limited to soil, sediments, water, and air, and other solids or liquids stored or disposed of at the property as may be determined to be necessary;
2. The documenting of scientific and engineering observations, including, but not limited to taking notes, recordings, photographs and surveying;

3. The drilling and finishing of boreholes for the purposes of collecting soil and groundwater samples without limitation; and
4. Other inquiry actions at the property as may be necessary to determine nature, extent and potential threat to human health and the environment.

Prior to mobilization, INTERA will contact Texas One Call to identify the locations of underground utilities at the Site. Procedures for safe work around aboveground utility lines are discussed in the SSHASP, as applicable.

No drilling permits or other permits are required for this work.

3.2.3 Pre-Implementation Location Survey

Not applicable.

3.2.4 Solid Media

Not applicable.

3.2.5 Subsurface Soil

One soil boring will be installed using a direct push rig that also has hollow stem auger capabilities. The boring will also be used for installation of a temporary monitor well and will be completed as follows (proposed soil boring/temporary monitor well location is shown on **Figure 4**):

- To a maximum depth of 35 feet if groundwater is not encountered,
- To a maximum depth of five feet below the top of the saturated zone if groundwater is encountered, or
- To bedrock if competent bedrock is encountered and the auger cannot be advanced.

The borehole will be continuously cored and geologically logged. Soil boring will be conducted in accordance with Section B.2.3.2 of the Project QAPP and in accordance with applicable INTERA SOPs (e.g., SOP 2 – Decontamination; SOP 5 – Hollow Stem Auger Drilling; SOP 6 – Direct Push Drilling).

3.2.6 Groundwater Sample

One temporary monitor well will be installed at the proposed location shown on **Figure 4**. The well will be screened across any “damp”, “wet”, or “saturated” zones encountered during drilling and logging of the borehole. The temporary monitor well will be allowed to recover overnight, if necessary, to allow for groundwater to enter the well. If groundwater is present in the well, the

water level will be measured and the well will be sampled. One groundwater sample will be collected, and the groundwater sample will be collected using a disposable bailer.

3.3 The groundwater sample will be analyzed for BTEX via EPA Method 8260C and for TPH via TCEQ Method TX1005. Following sampling activities, the temporary monitor well will be plugged and abandoned per applicable State of Texas regulations and INTERA SOPs. Monitor well installation and groundwater sampling activities will be conducted in accordance with Sections B.2.1.1 and B.2.1.3 of the Project QAPP and in accordance with applicable INTERA SOPs (e.g., SOP 2 – Decontamination; SOP 7 – Monitor Well Installation; SOP 9 – Monitor Well Gauging; and SOP 10 – Monitor Well Groundwater Sampling). QUALITY CONTROL SAMPLES

As described in Section B.5 of the Project QAPP, the quality assurance/quality control (QA/QC) program established for the Project and for the Limited Phase II ESA investigation shall evaluate data based on three general types of QC samples (matrix spikes, blanks, and duplicates). These QC samples are generated for analysis both in the field and internally by the laboratory.

3.3.1 Field Quality Control Samples

The sample collected at the Site during the field activities described in this FSP is for screening purposes only; therefore, field QA/QC samples will not be collected as part of this investigation.

3.3.2 Laboratory Quality Control Samples

In accordance with Section A.4.2 and B.5.1 of the Project QAPP, each analytical laboratory will analyze QA/QC samples as specified by the selected analytical method. These samples shall include, as applicable: surrogate samples for organic compounds, method blanks, matrix spikes (MSs), matrix spike duplicates (MSDs), initial and continuing calibration verification blanks (ICV/CCV), and laboratory control samples (LCSs).

3.4 Equipment Decontamination

All reusable equipment will be decontaminated before initial use and between collection of each sample. It is not anticipated that reusable sampling equipment will be used during this field event. If necessary, decontamination of equipment will be performed in accordance with Section B.2.6.1 of the Project QAPP and with applicable INTERA SOPs (Appendix B).

3.5 Post-Implementation Location Survey

INTERA will record the location of the temporary well in the field logbook and on the Site map. The temporary groundwater monitor well location will also be documented by photographs. INTERA will record the location of the temporary groundwater monitor well using a hand-held

Global Positioning System (GPS) unit or equivalent and by measurements from fixed objects at the site.

3.6 Investigation Derived Waste Management

It is anticipated that implementation of the Limited Phase II ESA field activities will generate the following investigation-derived waste (IDW):

- Soil cuttings,
- Purge water,
- Decon water (if needed),
- Used personal protective equipment (PPE) (e.g. gloves), and
- Miscellaneous waste (e.g., paper towels used for decontamination).

IDW will be containerized appropriately upon generation, labelled, and stored temporarily onsite in a pre-designated waste management area pending laboratory results.

Prior to disposal, soil cuttings, purge water, and decon water will be containerized in drums. All other solid waste (e.g., used PPE, the bailer, and miscellaneous waste) will be containerized in sealed plastic bags. Due to the low level of contamination expected to be present in the bagged waste, this IDW waste stream will be managed as nonhazardous solid waste and will be disposed of accordingly.

Results from the analysis of the groundwater sample will be used for waste profiling. In addition to the BTEX and TPH results from the groundwater sample, an IDW water sample will be submitted for analyses for volatile organic analysis (VOCs), semivolatile organic analysis (SVOCs), TX11 metals, and reactivity, corrosivity, and ignitability (RCI). An IDW soil sample will be analyzed for VOCs, SVOCs, TX11 metals and TPH. IDW transport and disposal will be handled by USA Environment.

3.7 SAMPLE HANDLING

The following subsections describe site-specific sample handling procedures, including sample identification and labeling, documentation, chain-of-custody, and shipping procedures. These procedures expound upon the general sample handling and custody procedures presented in Section B.3 of the Project QAPP. Sampling handling and custody procedures not discussed in the following subsections shall be implemented in accordance with the standards procedures outlined in Section B.3 of the Project QAPP.

3.7.1 Sample Identification and Documentation

Per Section B.3.2 of the Project QAPP, each sample collected at the Site during the Limited Phase II ESA will be identified using a unique sample identification (ID) number. The sample matrix (GW) and the name of the sample will be recorded on the chain-of-custody form, as well as in the field notes. The proposed sample name is listed in **Table 5**. The collected sample will be documented in the field log book and/or on the appropriate field form in accordance with appropriate SOPs.

The groundwater sample will be labeled using the prefix “GW” followed by a sequential number. For example, the groundwater sample will be labeled GW-01.

3.7.2 Sample Containers, Preservation, and Holding Times

Sample containers, sample preservation requirements, sample volumes, and holding times are specified in **Table 6** of this FSP.

3.7.3 Custody Procedures

Custody procedures will be conducted in accordance with Section B.3 of the QAPP.

3.7.4 Sample Shipment

Samples will be hand-delivered within 24 hours by INTERA to DHL, located in Round Rock, Texas. Care will be taken to ensure that samples are submitted to the laboratory in plenty of time for extraction or analysis to occur prior to requisite hold times as presented in Table B.2-1 of the Project QAPP.

4.0 ANALYTICAL PROGRAM

4.1 Selection of Chemicals of Potential Concern

As discussed in **Section 2.4**, the Task team identified COPCs for the Site based on a review of Site history, process knowledge, and environmental fate and transport. The COPCs are listed in Section 2.4 and are indicated by an “X” in **Table 4** (Proposed Analytes and Target COPCs). The list of COPCs may be amended based on additional analytical results and/or additional site information.

The following subsections identify the laboratories selected to support a determination whether COPCs are present at the Site and, if present, the analytical methods used to assess the concentrations at which these COPCs exist in sampled media.

4.2 Selected Laboratories

The laboratory selected to provide analytical services for this investigation is DHL Analytical located in Round Rock, Texas. The groundwater sample will be analyzed by DHL as will the soil and purge/decon IDW samples.

Per the requirements specified in Section A.5.2.8 of the Project QAPP, the listed laboratory is accredited through the Texas Laboratory Accreditation Program (TLAP) for the most current standards adopted by the National Environmental Laboratory Accreditation Program (NELAP) and the requirements in 30 Texas Administrative Code (TAC) 25. The laboratory has documented SOPs in place and data on record which demonstrate their capability of generating data that meet project objectives by the methods specified in this FSP. Applicable laboratory SOPs for the analysis of EPA Method 8260C and TCEQ Method TX1005 are provided in Appendix D of the Project QAPP.

4.3 Field Analytical Methods

Not applicable.

4.4 Fixed-Laboratory Analytical Methods

Unless otherwise specified in this FSP, all samples collected for offsite analysis as part of this investigation shall be evaluated using the applicable EPA method(s) listed in the most current edition of EPA SW-846 Manual, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. Requirements (including QC acceptance criteria) for these analytical methods are specified in Sections B.4.2 and B.5 of the Project QAPP or, if an alternate method is selected, in **Section 6** of this FSP. Any site-specific exceptions, additions, or changes to the requirements of the Project QAPP are documented in **Section 6** of this FSP.

The analytical methods selected (by media) and the analytes and COPCs for each method are detailed in **Table 4** (Proposed Analytes and Target COPCs). Each of the selected analyses will be performed in accordance with the applicable published methods for extraction, cleanup, preparation, and determination. The assigned laboratory will include all method-required and method-recommended QC steps, including the QA/QC procedures specified in the laboratory quality assurance manual and the procedures specified in the Project QAPP.

The following laboratory analytical methods will be used to analyze the groundwater sample:

- BTEX by EPA Method 8260C – DHL Analytical, Inc., Round Rock, Texas.
- TPH by TCEQ Method TX1005 – DHL Analytical, Inc., Round Rock, Texas.

The following laboratory analytical methods will be used to analyze the IDW water sample:

- VOCs by EPA Method 8260C – DHL Analytical, Inc., Round Rock, Texas.
- SVOCs by EPA Method 8270D – DHL Analytical, Inc., Round Rock, Texas.
- TX11 Metals by EPA Method 6020/7470 – DHL Analytical, Inc., Round Rock, Texas.
- Reactivity, Corrosivity and Ignitability by EPA Method 846 Ch. 7 – DHL Analytical, Inc., Round Rock, Texas.

The following laboratory analytical methods will be used to analyze the IDW soil sample:

- VOCs by EPA Method 8260C – DHL Analytical, Inc., Round Rock, Texas.
- SVOCs by EPA Method 8270D – DHL Analytical, Inc., Round Rock, Texas.
- TX11 Metals by EPA Method 6020/7470 – DHL Analytical, Inc., Round Rock, Texas.
- TPH by Method TCEQ TX1005 – DHL Analytical, Inc., Round Rock, Texas.

4.5 Instrument Calibration and Maintenance

Samples collected during the Limited Phase II ESA will be analyzed using laboratory equipment. All equipment used during the Limited Phase II ESA will be properly tested, inspected, maintained, and calibrated in accordance with the specifications outlined in Section B.6 of the Project QAPP.

4.6 Levels of Required Performance

The level of required performance (LORP) is the lowest quantified constituent or chemical of potential concern (COPC) concentration required from the laboratory to achieve Task objectives. The primary objective of the Limited Phase II ESA is to determine whether COPCs, if present, exceed one or more standards provided in the following guidelines:

- Groundwater - Texas Risk Reduction Project (TRRP) Tier 1 protective concentration levels (PCLs) (<https://www.tceq.texas.gov/remediation/trrp/trrppcls.html>)
- Groundwater - EPA Vapor Intrusion Screening Levels (VISLs) (<http://www.epa.gov/oswer/vaporintrusion/guidance.html>).

The site-specific standards are provided in **Table 4**.

For each identified COPC, the corresponding method quantitation limit (MQL) is less than the LORP, with the exception of TPH. This comparison shows that the selected analytical methods and associated MQLs are capable of quantifying currently identified COPCs (**Table 4**) at concentrations below the recommended regulatory action level, with the exception of TPH.

For the constituents TPH C6-C12, TPH >C12-C28, TPH >C12-C35, and TPH >C28-C35, the reported laboratory MQLs for TPH analyses by Method TX1005 in groundwater are greater than the respective LORPs. INTERA, in consultation with other Project Oversight staff, has subsequently reviewed the MQLs of available methods and has verified that currently proposed MQLs are the lowest achievable MQLs for the above noted COPCs in the specified matrix. Therefore, the MQL becomes the LORP for these COPCs.

4.7 Analytical Reporting Units

Analytical results for BTEX and TPH analyses will be reported as in milligrams per liter (mg/L). The laboratory will report the data following the performance criteria established in Section A.4.2.6 and B.5.1.2 of the Project QAPP.

5.0 ASSESSMENT, OVERSIGHT, AND REPORTS TO MANAGEMENT

Not applicable.

6.0 SITE-SPECIFIC EXCEPTIONS, ADDITIONS, OR CHANGES

6.1 Exceptions, Additions, and Changes to the Project QAPP

Exceptions, additions, and changes to the Project QAPP planned for this investigation include the following:

- Field QC samples will not be collected in accordance with the field QC requirements established in Section B.5.2 of the Project QAPP because the samples collected are for preliminary screening purposes only.
- Assessment, oversight, and reports to management as detailed in Section C of the Project QAPP are not applicable to this Limited Phase II ESA.

6.2 Exceptions, Additions, and Changes to Standard SOPs

Not applicable.

7.0 REFERENCES

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FIGURES

TABLES

Appendix A
Site-Specific Health and Safety Plan (SSHASP)

Appendix B

Standard Operating Procedures (SOPs)

Appendix C

Site-Specific Access Agreements